ICF international / Laboratory Data Consultants
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MEMORANDUM

TO: Lynda Deschambault, Remedial Project Manager
Site Cleanup Section 1, SFD-7-1

THROUGH: Rose Fong, ESAT Task Order Manager (TOM)
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00405090 Amendment 2

DATE: December 23, 2009

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC QB02
CERCLIS ID NO.:	CAD042245001
Case No.:	38940
SDG No.:	Y5129
Laboratory:	KAP Technologies, Inc. (KAP)
Analysis:	Semivolatiles
Samples:	2 Ground Water Samples (see Case Summary)
Collection Date:	September 15, 2009
Reviewer:	Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9

CLP PO: [X] Attention [X] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report - Tier 3

Case No.: 38940
SDG No.: Y5129
Site: Omega Chem OU2
Laboratory: KAP Technologies, Inc. (KAP)
Reviewer: Santiago Lee, ESAT/LDC
Date: December 23, 2009

I. CASE SUMMARY

Sample Information

Samples:	Y5129 and Y5130
Concentration and Matrix:	Low Concentration Water
Analysis:	Semivolatiles
SOW:	SOM01.2 and Modification Reference No. 1564.3
Collection Date:	September 15, 2009
Sample Receipt Date:	September 17, 2009
Extraction Date:	September 20, 2009
Analysis Date:	September 29, 2009 and October 6, 2009

Field QC

Field Blanks (FB):	Not provided
Equipment Blanks (EB):	Not provided
Background Samples (BG):	Not provided
Field Duplicates (D1):	Not provided

Laboratory QC

Method Blanks & Associated Samples:

SBLK27:	Y5129, Y5130

Tables

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

CLP PO Action

Nondetected results for 4-chloroaniline, hexachlorocyclopentadiene, and 3,3'-dichlorobenzidine in samples Y5129 and Y5130 and for 2-nitroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, and 4-nitroaniline in sample Y5129 are qualified as rejected (R) due to very low deuterated monitoring compound (DMC) recoveries (<10%) (see Comment A).

CLP PO Attention

1. Results for some analytes are qualified as estimated (J) due to calibration problems (see Comments C and D).

2. Results for some analytes in sample Y5130 are qualified as estimated (J) due to high internal standard (IS) areas (see Comment E).

Sampling Issues

1. The sampler signature is missing on the traffic report and chain of custody record (TR/COC) (refer to page 4 in the data package).

2. The matrix spike/matrix spike duplicate (MS/MSD) analysis was not required. Consequently, the matrix-specific accuracy and precision could not be evaluated.

Additional Comments

Tentatively identified compounds (TICs) were found in samples Y5129 and Y5130 (see attached Form 1Ks).

The laboratory performed manual integrations on calibrations and samples due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration,* SOM01.1, May 2005;
- *Modifications Updating SOM01.1 to SOM01.2,* Amended April 11, 2007; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, June 2008.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	No	C
4.	Continuing Calibration Verification	No	D
5.	Laboratory Blanks	Yes	
6.	Field Blanks	N/A	
7.	Deuterated Monitoring Compounds	No	A
8.	Matrix Spike/Matrix Spike Duplicate	N/A	
9.	Laboratory Control Sample/Duplicate	N/A	
10.	Internal Standards	No	E
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	B
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	N/A	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. Nondetected results for the following analytes are qualified as rejected due to very low DMC recoveries and are flagged "R" in Table 1A.

{4-Chloroaniline-d4}

- 4-Chloroaniline, hexachlorocyclopentadiene, and 3,3'-dichlorobenzidine in samples Y5129 and Y5130

{4-Nitrophenol-d4}

- 2-Nitroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, and 4-nitroaniline in sample Y5129

Recoveries of 3% and 2% were reported for DMC 4-chloroaniline-d4 in samples Y5129 and Y5130, respectively. A recovery of 2% was reported for DMC 4-nitrophenol-d4 in sample Y5129. Samples were not reextracted. The extract for sample Y5130 was reanalyzed with similar results (4-chloroaniline-d4 recovery = 1%). Results from the original analysis of sample Y5130 are presented in Table 1A since the reanalysis results are similar.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

B. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

C. Results for the following analytes are qualified as estimated due to large percent relative standard deviations (%RSDs) in initial calibration and are flagged "J" in Table 1A.

- 2,4-Dinitrotoluene and benzo(k)fluoranthene in samples Y5129 and Y5130

%RSDs of 31.0% and 20.1% were reported for 2,4-dinitrotoluene and benzo(k)fluoranthene, respectively, in the 09/28/09 initial calibration. These values exceeded the $\leq$20.0% validation criterion.

D. Results for the following analyte are qualified as estimated due to a large percent difference (%D) in continuing calibration verification (CCV) and are flagged "J" in Table 1A.

- Pentachlorophenol in Y5129 and Y5130

A %D of -31.5% was reported for pentachlorophenol in the 09/29/09 06:38 CCV. This value exceeded the ±25.0% validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

E. Results for the following analytes are qualified as estimated due to high IS areas and are flagged "J" in Table 1A.

{Chrysene-d12}

- Pyrene, butylbenzylphthalate, 3,3'-dichlorobenzidine, benzo(a)anthracene, bis(2-ethylhexyl)phthalate and chrysene in sample Y5130

{Perylene-d12}

- Di-n-octylphthalate, benzo(a)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene in sample Y5130

IS areas outside QC limits are shown below.

Sample	Internal Standard	Area	QC Limit
Y5130	Chryene-d12	46213004	10756140-21512280
Y5130	Perylene-d12	37858620	8365862-16731725
Y5130RE	Chryene-d12	46354342	10756140-21512280
Y5130RE	Perylene-d12	38928795	8365862-16731725

Qualified results are considered quantitatively questionable. Sample Y5130 was not reextracted. The extract was reanalyzed with similar results. Results from the original analysis of sample Y5130 are presented in Table 1A since the reanalysis results are similar.

Data users should note that the result for 3,3'-dichlorobenzidine in sample Y5130 has been qualified as rejected (see Comment A).

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

ANALYTICAL RESULTS

Case No. : 38940 SDG No. : Y5129 **Table 1A**

Site : OMEGA CHEM OU2

Lab : KAP Technologies, Inc.

Reviewer : Santiago Lee, ESAT/LDC **QUALIFIED DATA** **Analysis Type :** Low Level Water Samples

Date : 12/21/09 **Concentration in ug/L** for Semivolatiles

Station Location :	67			68			Method Blank											
Sample ID :	Y5129			Y5130			SBLK27			CRQL								
Collection Date :	9/15/2009			9/15/2009														
Dilution Factor :	1.0			1.0			1.0											
Semivolatiles	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Benzaldehyde	5.0U			5.0U			5.0U			5.0								
Phenol	5.0U			5.0U			5.0U			5.0								
Bis(2-chloroethyl)ether	5.0U			5.0U			5.0U			5.0								
2-Chlorophenol	5.0U			5.0U			5.0U			5.0								
2-Methylphenol	5.0U			5.0U			5.0U			5.0								
2,2'-Oxybis(1-chloropropane)	5.0U			5.0U			5.0U			5.0								
Acetophenone	5.0U			5.0U			5.0U			5.0								
4-Methylphenol	5.0U			5.0U			5.0U			5.0								
N-Nitroso-di-n-propylamine	5.0U			5.0U			5.0U			5.0								
Hexachloroethane	5.0U			5.0U			5.0U			5.0								
Nitrobenzene	5.0U			5.0U			5.0U			5.0								
Isophorone	5.0U			5.0U			5.0U			5.0								
2-Nitrophenol	5.0U			5.0U			5.0U			5.0								
2,4-Dimethylphenol	5.0U			5.0U			5.0U			5.0								
Bis(2-chloroethoxy)methane	5.0U			5.0U			5.0U			5.0								
2,4-Dichlorophenol	5.0U			5.0U			5.0U			5.0								
Naphthalene	5.0U			5.0U			5.0U			5.0								
4-Chloroaniline	5.0U	R	A	5.0U	R	A	5.0U			5.0								
Hexachlorobutadiene	5.0U			5.0U			5.0U			5.0								
Caprolactam	4.0L	J	B	5.0U			5.0U			5.0								
4-Chloro-3-methylphenol	5.0U			5.0U			5.0U			5.0								
2-Methylnaphthalene	5.0U			5.0U			5.0U			5.0								
Hexachlorocyclopentadiene	5.0U	R	A	5.0U	R	A	5.0U			5.0								
2,4,6-Trichlorophenol	5.0U			5.0U			5.0U			5.0								
2,4,5-Trichlorophenol	5.0U			5.0U			5.0U			5.0								
1,1'-Biphenyl	5.0U			5.0U			5.0U			5.0								

ANALYTICAL RESULTS

Case No. : 38940 SDG No. : Y5129 **Table 1A**

Site : OMEGA CHEM OU2

Lab : KAP Technologies, Inc.

Reviewer : Santiago Lee, ESAT/LDC **QUALIFIED DATA** **Analysis Type :** Low Level Water Samples

Date : 12/21/09 **Concentration in ug/L** for Semivolatiles

Station Location :	67			68			Method Blank											
Sample ID :	Y5129			Y5130			SBLK27			CRQL								
Collection Date :	9/15/2009			9/15/2009														
Dilution Factor :	1.0			1.0			1.0											
Semivolatiles	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
2-Chloronaphthalene	5.0U			5.0U			5.0U			5.0								
2-Nitroaniline	10U	R	A	10U			10U			10								
Dimethylphthalate	5.0U			5.0U			5.0U			5.0								
2,6-Dinitrotoluene	5.0U			5.0U			5.0U			5.0								
Acenaphthylene	5.0U			5.0U			5.0U			5.0								
3-Nitroaniline	10U	R	A	10U			10U			10								
Acenaphthene	5.0U			5.0U			5.0U			5.0								
2,4-Dinitrophenol	10U	R	A	10U			10U			10								
4-Nitrophenol	10U	R	A	10U			10U			10								
Dibenzofuran	5.0U			5.0U			5.0U			5.0								
2,4-Dinitrotoluene	5.0U	J	C	5.0U	J	C	5.0U			5.0								
Diethylphthalate	5.0U			5.0U			5.0U			5.0								
Fluorene	5.0U			5.0U			5.0U			5.0								
4-Chlorophenyl-phenylether	5.0U			5.0U			5.0U			5.0								
4-Nitroaniline	10U	R	A	10U			10U			10								
4,6-Dinitro-2-methylphenol	10U			10U			10U			10								
N-Nitrosodiphenylamine	5.0U			5.0U			5.0U			5.0								
1,2,4,5-Tetrachlorobenzene	5.0U			5.0U			5.0U			5.0								
4-Bromophenyl-phenylether	5.0U			5.0U			5.0U			5.0								
Hexachlorobenzene	5.0U			5.0U			5.0U			5.0								
Atrazine	5.0U			5.0U			5.0U			5.0								
Pentachlorophenol	10U	J	D	10U	J	D	10U			10								
Phenanthrene	5.0U			5.0U			5.0U			5.0								
Anthracene	5.0U			5.0U			5.0U			5.0								
Carbazole	5.0U			5.0U			5.0U			5.0								
Di-n-butylphthalate	5.0U			5.0U			5.0U			5.0								

ANALYTICAL RESULTS

Case No. : 38940 SDG No. : Y5129 **Table 1A**

Site : OMEGA CHEM OU2

Lab : KAP Technologies, Inc.

Reviewer : Santiago Lee, ESAT/LDC **QUALIFIED DATA** **Analysis Type :** Low Level Water Samples

Date : 12/21/09 **Concentration in ug/L** for Semivolatiles

Station Location :	67			68			Method Blank											
Sample ID :	Y5129			Y5130			SBLK27			CRQL								
Collection Date :	9/15/2009			9/15/2009														
Dilution Factor :	1.0			1.0			1.0											
Semivolatiles	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Fluoranthene	5.0U			5.0U			5.0U			5.0								
Pyrene	5.0U			5.0U	J	E	5.0U			5.0								
Butylbenzylphthalate	5.0U			5.0U	J	E	5.0U			5.0								
3,3'-Dichlorobenzidine	5.0U	R	A	5.0U	R	AE	5.0U			5.0								
Benzo(a)anthracene	5.0U			5.0U	J	E	5.0U			5.0								
Chrysene	5.0U			5.0U	J	E	5.0U			5.0								
Bis(2-ethylhexyl)phthalate	5.0U			5.0U	J	E	5.0U			5.0								
Di-n-octylphthalate	5.0U			5.0U	J	E	5.0U			5.0								
Benzo(b)fluoranthene	5.0U			5.0U	J	E	5.0U			5.0								
Benzo(k)fluoranthene	5.0U	J	C	5.0U	J	CE	5.0U			5.0								
Benzo(a)pyrene	5.0U			5.0U	J	E	5.0U			5.0								
Indeno(1,2,3-cd)pyrene	5.0U			5.0U	J	E	5.0U			5.0								
Dibenzo(a,h)anthracene	5.0U			5.0U	J	E	5.0U			5.0								
Benzo(g,h,i)perylene	5.0U			5.0U	J	E	5.0U			5.0								
2,3,4,6-Tetrachlorophenol	5.0U			5.0U			5.0U			5.0								
1,4-Dioxane	2.0U			2.0U			2.0U			2.0								

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation LImit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," June 2008.

U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.